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Intensive Rotational Grazing of Steers on Highly Erodible Land at the Adams County CRP Project, 2001

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Abstract
A steer grazing demonstration was conducted in 2001 at the CRP Research and Demonstration Project farm near Corning, Iowa. Ninety-five steers were delivered to the Adams County CRP farm on April 27, 2001. The steer pasture at the CRP farm was 76 acres, divided into 33 paddocks with electric fence. Cattle were moved 101 times to a fresh paddock during the grazing season. Most of the moves (79.2%) followed 1 day of grazing in a paddock. No paddock was grazed for more than 3 days in succession. Rate of gain on pasture (2.12 lbs./animal/day) was higher in 2001 than in any previous year in the 8-year steer grazing project at the CRP farm. The 95 steers gained a total of 21,056 pounds on pasture, and the cost of the gain on pasture was $51.30/cwt. The 2001 steer grazing project showed a small profit above all costs. The net profit was $4.12/steer or $5.15/acre. Large profits and large losses are possible, primarily depending on the difference between the buying and selling prices.

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Summary

A steer grazing demonstration was conducted in 2001 at the CRP Research and Demonstration Project farm near Corning, Iowa. Ninety-five steers were delivered to the Adams County CRP farm on April 27, 2001. The steer pasture at the CRP farm was 76 acres, divided into 33 paddocks with electric fence. Cattle were moved 101 times to a fresh paddock during the grazing season. Most of the moves (79.2%) followed 1 day of grazing in a paddock. No paddock was grazed for more than 3 days in succession. Rate of gain on pasture (2.12 lbs./animal/day) was higher in 2001 than in any previous year in the 8-year steer grazing project at the CRP farm. The 95 steers gained a total of 21,056 pounds on pasture, and the cost of the gain on pasture was $51.30/cwt. The 2001 steer grazing project showed a small profit above all costs. The net profit was $4.12/steer or $5.15/acre. Large profits and large losses are possible, primarily depending on the difference between the buying and selling prices.

Introduction

A steer grazing demonstration was conducted in 2001 at the CRP Research and Demonstration Project farm near Corning, Iowa. Steers were purchased between February 28 and March 9, 2001, at sale barns near Corning. They were vaccinated for IBR, PI_3, BVD, and BRSV at the barns before delivery to the Iowa State University Armstrong Research Farm near Lewis, Iowa for backgrounding. Ninety-five steers were delivered to the Adams County CRP farm on April 27, 2001. They were weighed, revaccinated, wormed, implanted with Component TE-G/Tylan®, then held in dry lot for 2 days to become accustomed to electric fences. In the lot, they were fed grass hay. After the steers went to pasture, they received no supplementary feed other than a free choice mineral that supplied both macro-minerals and micro-minerals and the additive Gain Pro®. Mineral consumption averaged 2.82 oz./head per day.

Materials and Methods

The steer pasture at the CRP farm was 76 acres, divided into 33 paddocks with electric fence. The pasture was approximately 11 acres larger in 2001 than in previous years, because of the addition of 5 new paddocks. The original 65 acre pasture is cool-season grasses with varying amounts of legumes. Tall fescue and red clover are the predominant grass and legume species. The 11 acres added in 2001 are 4 paddocks of big bluestem and Indiangrass, and 1 paddock of Kura clover and cool-season grasses. Water is readily accessible from all the paddocks. In general, 2 rules guided grazing management: 1) during each grazing cycle, no more than half the standing forage was to be grazed, and 2) each paddock was to rest approximately 30 days. Cattle were moved 101 times to a fresh paddock during the grazing season. Most of the moves (79.2%) followed 1 day of grazing in a paddock. No paddock was grazed for more than 3 days in succession.

Steers were marketed in 2 groups. They were all weighed on July 25, 2001, and 60 of the heaviest steers were sold at that time. The remaining 35 steers went back to pasture until September 5, 2001. The average daily gains of the 35 steers that remained in pasture increased from 1.85 lbs. before July 25 to 2.42 lbs. between July 25 and September 5. Table 1 summarizes the performance of each marketing group and both groups together. Table 2 presents a summary of the steer grazing project at the CRP Research and Demonstration Farm from 1994 through 2001. Table 3 reports economic performance in 2001.

Results and Discussion

In Table 3, the purchase cost includes the buyer's commission ($1.00/cwt.) plus the actual purchase cost of the calves ($103.27/cwt.). During the prepasture growing period lasting approximately 55 days, costs averaged $0.69/head/day, and daily gains averaged 0.85 lbs./animal. The total weight of the steers when they were delivered to the pasture on April 27 was 56,324 lbs.

Table 1. Performance by market group

Group	No.	Days	Starting Wt.		Ending Wt.		Gain		Average
			Total	Ave.	Total	Ave.	Total	Ave.	Daily Gain
Sold July 25	60	89	37,110	618.5	48,770	812.8	11,660	194.3	2.18
Sold Sept. 5	35	131	19,214	549.0	28,610	817.4	9,396	268.5	2.05
Combined	95	104.5	56,324	592.9	77,380	814.5	21,056	221.6	2.12

Table 2. Summary of steer grazing project by years, 1994 – 2001

Item	Year								Average
	1994	1995	1996	1997	1998	1999	2000	2001	
Date grazing started	4/29	5/4	5/10	5/3	5/2	4/24	4/24	4/27	4/30
Date grazing ended	11/3	9/14	10/15	10/10	8/19	8/16	8/29	9/5	9/17
Number of days grazed	188	133	158	160	109	114	128	131	140
Animal-days of grazing	9,912	9,975	13,114	8,794	8,175	8,664	7,906	9,925	9,558
Animal-days grazing/animal	152.5	153.5	201.8	135.3	125.8	133.3	121.6	130.6	144.3
Stocking rate, steers/animal	0.81	1.15	1.28	0.85	1.15	1.17	0.95	1.00	1.05
Average beginning weight (lbs.)	488.2	495.7	333.3	633.9	605.9	622.7	613.3	592.9	548.2
Average ending weight (lbs.)	731.5	647.7	488.3	842.7	808.3	829.7	777.6	814.5	742.5
Total gain (lbs.)	18,003	11,403	12,872	15,862	15,182	15,732	14,453	21,056	15,570
Gain per animal/day	1.82	1.14	0.98	1.80	1.86	1.82	1.83	2.12	1.67
Lbs. of gain/animal	277	175	198	244	234	242	222	277	234

Table 3. Economic Summary of the 2001 Steer Grazing Project.

Item	Amount ($)
Cattle purchases: 51,845 lbs. (Includes buyer's commission)	54,059.83
Prepasture feed & health treatments, 5,258 animal-days	3,625.80
Land	3,442.04
Seed	156.02
Machine and fuel	514.90
Fencing	987.97
Water	541.65
Interest	2,216.43
Trucking (prepasture trucking accounts for $360 of the total)	972.75
Pest control	380.50
Vaccines	98.00
Implants	192.00
Mineral supplement	498.40
Equipment rental	10.00
Check off	95.00
Labor	1,056.00
Total costs	68,847.29
Sale value at the end of grazing: 77,380 pounds	69,238.80
Net profit	391.51

Annual land cost was assumed to be $45.29/acre, based on a previous estimate. Fencing and water system costs were estimated from partial records of initial costs. The interest rate was 9.00%, and labor was charged at $8.00 per hour. Rate of gain on pasture (2.12 lbs./animal/day) was higher in 2001 than in any previous year in the 8–year steer grazing project at the CRP farm. The 95 steers gained a total of 21,056 pounds on pasture, and the cost of the gain on pasture was $51.30/cwt. The final value of the steers is based on weights taken at the farm. Sale price was $88.00/cwt. for steers sold in July and $92.00/cwt. for those sold in September. The 2001 steer grazing project showed a small profit above all costs. The net profit was $4.12/steer or $5.15/acre.

Implications

Historically, the profitability of growing cattle on grass has been highly variable, due to production and price variation. Large profits and large losses are possible, primarily depending on the difference between the buying and selling prices.